

S P E C I F I C A T I O N

TITLE OF THE INVENTION

5

“SUPPORTING FRAMEWORKS”

CROSS REFERENCE TO RELATED APPLICATION

This application claims priority of German patent application number
10 10312935.9 filed March 22, 2003, the entire disclosure of which is incorporated herein
by reference.

BACKGROUND OF THE INVENTION

The present invention relates to supporting frameworks. In an embodiment of
15 the invention, a supporting framework has at least one roller which is carried by a
carrying frame. The axis of the roller is located along the horizontal direction in the
use position, and projects, by way of axial extensions, out of the ends of the roller.
The axial extensions project through bearing openings in vertically extending bearing
20 limbs of the carrying frame. The lugs can prevent a workpiece from moving past the
ends of the roller when the lugs are in the active positions. The supporting
frameworks of the present invention can also be described as roller stands.

Supporting frameworks have long been known from the prior art. Such a
supporting framework is described, for example, in German patent document number
DE-A1 1 055 925. In that document, it is provided that the substructure of the
25 supporting framework has a pair of legs. This pair of legs has, on the floor side, an
extension arm in the form of a crossmember, which has feet at the ends. A height-
adjustable tube, which carries a supporting head at the end, may project out of one of
the legs. This supporting head carries a roller, the axis of which is located along the
horizontal, so that a workpiece may be positioned on the vertex of the roller, for
30 support of the workpiece.

SUMMARY OF THE INVENTION

An advantage of the present invention is to provide a supporting framework in a functionally advantageous manner.

In an embodiment of the present invention, two lateral guide elements, which
5 are each seated flatly on bearing limbs, can each be pivoted back and forth about an axial extension between an active position and an inactive position and project beyond the roller radius. As a result of this configuration, the lateral guide elements counteract the situation where the workpiece resting on the roller veers out laterally beyond the ends of the roller, provided that the width of the workpiece is less than the
10 longitudinal extent of the roller.

If the workpiece is wider than the longitudinal length of the roller, it is advantageously possible for the lateral guide elements to be pivoted back and forth from the active position into an inactive position.

Preferably, the lateral guide elements are lugs integrally formed on lug support
15 disks. Each lug support disk may have a central bearing opening which is plugged onto the axial extension projecting from the end of the roller and is enclosed or at least partially surrounded by an approximately semicircular slot. A single fastening screw, for example, may project through the slot. Furthermore, the single fastening screw may be screwed into a threaded bore of the bearing limb, disposed directly beneath the
20 axial extension and rests on the peripheries of the semicircular slot by way of its head.

A catch is also advantageously provided which, in respect of the axial extension, is disposed on that side of the bearing limb which is directed away from the fastening screw and, with the lateral guide elements moved into the active position, projects into the semicircular slot. The catch may be located in front of a narrow wall of the semicircular slot. The catch is advantageously formed by a notched portion. The notch may be disposed along a peripheral incision of the bearing limb, which can be formed by a metal sheet.
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Moreover, it is further preferably provided that it is possible to overcome the action of the catch by tilting the lug support disk alongside the lateral guide element axially about the fastening location. The lug support disk may be a punched part.
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It is further provided that, in its vertically upwardly oriented active position, the lateral guide element assumes the position in which it is secured against pivoting

by the catch or latching stop and an end stop of the fastening screw. The lateral guide elements may be sheathed in plastic material. Also, the lateral guide elements may form a pivoting handle.

5 Located diametrically opposite the semicircular slot is a window, which can be configured as a double arrow.

The diameter of the lug support disk is smaller than the diameter of the roller.

Additional features and advantages of the present invention are described in, and will be apparent from, the following Detailed Description of the Invention and the figures.

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BRIEF DESCRIPTION OF THE FIGURES

Figure 1 shows a supporting framework according to the present invention in an elevational view.

Figure 2 shows the supporting framework of Figure 1 in a side view.

15 Figure 3 shows a partial sectional view along line III-III in Figure 1 on an enlarged scale with the lateral guide element moved into an active position.

Figure 4 shows the supporting framework of Figure 3 with the lateral guide element moved into an inactive position.

20 Figure 5 shows a detailed, perspective view of the roller-containing carrying frame of the supporting framework with the lateral guide elements moved into an active position.

Figure 6 shows a detailed, perspective view of the carrying frame with a bearing limb.

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DETAILED DESCRIPTION OF THE INVENTION

Referring to Figures 1 and 2, the legs 1, 2 of the supporting framework S are substantially in the form of an upside-down T. The crossbar of the T in each case form a cross member 3, 4, at the ends of which are seated end caps 5 which form the feet of the supporting framework S.

30 The supporting framework S has a fixed leg 2. A supporting tube 6 is mounted in the fixed leg 2 and can be telescoped out of the fixed leg 2 and can be fixed in various height positions by means of a clamping element 7. In the region of the

clamping element 7, the second, longer leg 1 is articulated in a pivotable manner, so that it can be moved from a stop-limited spread-out position, which is illustrated in the drawings, into a position in which it is parallel to the fixed leg 2.

Referring also to Figures 3-5, a carrying frame 8 or roller support is screwed 5 onto the free end of the supporting tube 6. The carrying frame 8 has a U-shaped configuration and carries a roller 9 capable of supporting a workpiece. Furthermore, the carrying frame 8 has an angled portion 8', by which the carrying frame 8 is screwed to the end of the supporting tube 6. The U-shaped opening of the carrying frame 8 is used for mounting the roller 9. The bearing limbs 10 or opposed ends of the 10 carrying frame 8, which form U-limbs, have bearing openings 11. The roller 9 engages, by way of its axial extensions 12, in the bearing openings 11 of the bearing limbs 10, which form the U-limbs. Lateral guide elements O or workpiece guides which are disposed opposite one another and associated with the ends of the roller 9 are plugged onto the axial roller extensions 12 projecting from the bearing openings 15 11. The mutually facing inner surfaces of the lateral guide elements O rest flatly on the outer surfaces of the bearing limbs 10.

The lateral guide elements O each comprise a circular lug support disk 13 and a radially projecting lug 14 integrally formed thereon. The lateral guide elements O, which are produced as punched parts, have their lugs 14 sheathed in plastic material. 20 The plastic-sheathed lugs 14 each provide the function of a pivoting handle. Furthermore, the lug support disks 13 each have a central bearing opening 15, in which the axial roller extensions 12 are accommodated. Disposed around the central bearing openings 15, the lug support disks 13 each have a semicircular slot 16.

Fastening screws 18 are provided for securing the lateral guide elements O in a 25 pivotable manner on the bearing limbs 10 of the carrying frame 8. These fastening screws 18 project through the semicircular slots 16 of the lug support disks 13 into threaded bores 19 of the bearing limbs 10 which are located beneath the bearing openings 15. See the illustrations in Figures 3 and 4, in particular. Furthermore, a spring ring 20 and a washer 21 are associated with each fastening screw 18. The 30 washers 21 rest on the peripheries of the semicircular slots 16. The spring rings 20 are positioned such that they are disposed between the screw heads and the washers 21.

Referring to Figures 3-6, the sheet-metal carrying frame 8 has peripheral incisions in the form of notched portions disposed in each case on its bearing limb 10 above the bearing openings 11. Each notched portion performs the function of a catch 22. The catches 22, which are oriented away from the end surfaces of the roller 9, 5 project beyond the inner surfaces of the lug support disks 13 into the semicircular slots 16. The catches are located in the slots 16, with the lateral guide elements O oriented vertically, in each case in front of the narrow walls 23 of the semicircular slots 16.

If the user positions on the vertex of the transversely oriented roller 9 a workpiece (not illustrated) which has a width which is less than the length of the roller 9, the user can pivot the lateral guide elements O, via the lugs 14, into a vertically upwardly directed, catch-secured active position. This counteracts any possibility of the workpiece veering out laterally beyond the end peripheries of the roller 9. In this position, as has already been mentioned, each catch 22 is located in front of the narrow walls 23 of the curved slots 16. In this vertically upwardly oriented active position, the 10 lateral guide elements O, as a result of the catch-formed latching stops and end stops formed by the fastening screws 18, assume a position in which they are secured against pivoting.

In order for the lateral guide elements O to be moved into inactive positions, the later guide elements O can be pivoted, via the lugs 14, in the direction of the 20 double arrows 17. In this case, the following takes place: the lateral guide elements O, in the upwardly oriented active position, initially only have to be pulled away to a minimal extent from the end surfaces of the roller 9. In the course of the associated pivoting movement, the catch 22 passes out of the curved slots 16, counter to the spring force of the spring ring 20, and slides along the inner surfaces of the lug support 25 disks 13 until the narrow walls 24 of the curved slots 16 engage against the end-stop-forming fastening screws 18. Furthermore, the lateral guide elements O assume a slightly oblique vertical position in relation to the bearing limbs 10 as a result of the spring rings 20, see the illustration in Figure 4 in particular. The lateral guide elements O have thus assumed the downwardly directed, vertical inactive position, and the user 30 can position an overly wide workpiece on the vertex of the roller 9 of the supporting framework S, even such that the workpiece projects beyond the end surfaces of the roller 9. The lateral guide elements O can be placed in their active and inactive

positions independent of each other. Also, the lateral guide elements O can be rotated to various positions, as may be desired, such that the lugs 14 can have various positions between the active and inactive positions.

If a workpiece (not illustrated) is of sufficiently greater width, it is also
5 possible to set up a second supporting framework S, if present, such that the two
supporting frameworks S and/or the rollers 9 are aligned with one another. All that
may be required here is for the outer lateral guide elements O to be pivoted into an
active position. The inner lateral guide elements O, which are directed toward one
another, remain in the downwardly directed inactive position. This is only possible,
10 however, since the diameter of the lug support disks 13 of the inner lateral guide
elements O are smaller than the diameter of the rollers 9 so as not to interfere with the
workpiece. Similarly, additional supporting frameworks S can be utilized to support a
workpiece. Even further, the lateral guide elements O can be individually positioned
between active and inactive positions as desired.

15 Via the fastening screws 18, it is possible to set the surface pressure of the
lateral guide elements O on the bearing limbs 10 by means of a screwing tool.

It should be understood that various changes and modifications to the presently
preferred embodiments described herein will be apparent to those skilled in the art.
Such changes and modifications can be made without departing from the spirit and
20 scope of the present invention and without diminishing its intended advantages. It is
therefore intended that such changes and modifications be covered by the appended
claims.